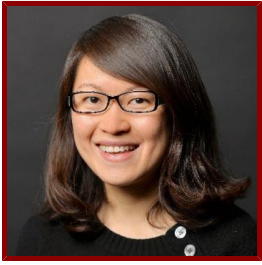


Stanford



Sindy Tang

Associate Professor of Mechanical Engineering, Senior Fellow at the Woods Institute for the Environment and Professor, by courtesy, of Radiology and of Bioengineering

Bio

BIO

Prof. Sindy KY Tang is the Kenneth and Barbara Oshman Faculty Scholar and Associate Professor of Mechanical Engineering and by courtesy of Bioengineering and Radiology (Precision Health and Integrated Diagnostics) at Stanford University. She received her Ph.D. from Harvard University in Engineering Sciences under the supervision of Prof. George Whitesides. The micro-nano-bio lab under the direction of Prof. Tang aims to develop innovative micro and nanoscale devices that enable precise manipulation, measurement, and recapitulation of biological systems, in order to understand the "rules of life" and accelerate precision medicine and material design for a future with better health and environmental sustainability. She was a Stanford Biodesign Faculty Fellow in 2018. Prof. Tang's work has been recognized by multiple awards including the NSF CAREER Award, and invited lecture at the Nobel Symposium on Microfluidics in Sweden. Website: <http://web.stanford.edu/group/tanglab/>

ACADEMIC APPOINTMENTS

- Associate Professor, Mechanical Engineering
- Senior Fellow, Stanford Woods Institute for the Environment
- Associate Professor (By courtesy), Radiology
- Associate Professor (By courtesy), Bioengineering
- Member, Bio-X
- Member, Wu Tsai Human Performance Alliance
- Faculty Fellow, Sarafan ChEM-H

ADMINISTRATIVE APPOINTMENTS

- Associate Professor (by courtesy), Department of Bioengineering, Stanford University, (2023- present)
- Associate Professor (by courtesy), Department of Radiology, School of Medicine, Stanford University, (2018- present)
- Associate Professor, Mechanical Engineering, Stanford University, (2018- present)
- Assistant Professor, Mechanical Engineering, Stanford University, (2011-2018)

HONORS AND AWARDS

- Faculty Fellow Award, The Reid and Polly Anderson Foundation (2011-2013)
- Junior Faculty Fellow Award, Gabilan (2011-2013)
- Petroleum Fund New Investigator Award, ACS (2013-2015)
- 3M Nontenured Faculty Award, 3M (2013-2015)
- NSF CAREER Award, NSF (2015-2020)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Editorial Board, Microsystems & Nanoengineering, Nature Springer Publishing (2022 - present)
- International Advisory Board, Advanced NanoBioMed Research, Wiley Publishing (2020 - present)
- Associate Editor, Droplets, Wiley Publishing (2022 - present)
- Advisory Board, Lab on a Chip, Royal Society of Chemistry (2022 - present)
- Editorial Board, Micromachines, Multidisciplinary Digital Publishing Institute (MDPI) Publishing (2020 - present)
- Site Director, NSF Science & Technology Center for Cellular Construction (2017 - present)
- Co-lead of Bio Interfaces Focus Area, Stanford SystemX Alliance (2018 - present)

PROGRAM AFFILIATIONS

- Stanford SystemX Alliance

PROFESSIONAL EDUCATION

- PhD, Harvard University , Engineering Sciences
- MS, Stanford University , Electrical Engineering
- BS, Caltech , Electrical Engineering

PATENTS

- Sindy KY Tang, Craig Criddle, Jaewook Myung, Minkyu Kim. "United States Patent 10,273,510 Emulsion-based fermentation for accelerated gas substrate mass transfer", Leland Stanford Junior University
- Sindy K.Y. Tang, Ming Pan, Fengjiao Lyu, Ratmir Derda. "United States Patent 11,135,586 Fluorinated pickering emulsion", Leland Stanford Junior University
- Lucas R. Blanch, Sindy K. Y. Tang. "United States Patent App. 16/425796 Microfluidic guillotine for splitting cellular structures", Leland Stanford Junior University
- Nimit Jain, Andrew Z. Fire, Lucas R. Blanch, Sindy K. Y. Tang, Karen L. Artilles, Julia T. Garcia-Daou; Y. Whitney Yin; Michal R. Szymanski. "United States Patent App. 17/624,782 RNA Replication Using Transcription Polymerases", Leland Stanford Junior University
- Nicolas Castano, Seth Cordts, Fengjiao Lyu, Bryan Bunning, Kari Nadeau, Sindy K.Y. Tang. "United States Patent App. 62/888,884 Microfluidic device and diagnostic methods for allergy testing based on detection of basophil activation", Leland Stanford Junior University
- Ratmir Derda, Sindy K.Y. Tang, George M. Whitesides. "United States Patent 9,499,813 Systems and methods for amplification and phage display", Harvard University, Dec 11, 0189

LINKS

- Tang Lab: <http://stanford.edu/group/tanglab/>
- Google Scholar: https://scholar.google.com/citations?hl=en&user=HJt-6nkAAAAJ&view_op=list_works&sortby=pubdate

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

The long-term goal of Dr. Tang's research program is to harness mass transport in microfluidic systems to accelerate precision medicine and material design for a future with better health and environmental sustainability.

Current research areas include: (I) Physics of droplets in microfluidic systems, (II) Interfacial mass transport and self-assembly, and (III) Applications in food allergy, single-cell wound repair, and the bottom-up construction of synthetic cell and tissues in close collaboration with clinicians and biochemists at the Stanford School of Medicine, UCSF, and University of Michigan.

For details see <https://web.stanford.edu/group/tanglab/>

Teaching

COURSES

2024-25

- Biotransport Phenomena: APPPHYS 235, BIOE 235, BIOPHYS 235, ME 235 (Spr)
- Introductory Fluids Engineering: ME 70 (Win)

2023-24

- Introductory Fluids Engineering: ME 70 (Win)

2022-23

- Biotransport Phenomena: APPPHYS 235, BIOPHYS 235, ME 235 (Win)
- Introductory Fluids Engineering: ME 70 (Spr)

2021-22

- Biotransport Phenomena: APPPHYS 235, BIOPHYS 235, ME 235 (Win)
- Introductory Fluids Engineering: ME 70 (Spr)

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Annatoma Arif, Nicolas Castano, Sungu Kim, Roslyn Massey, Mengren Wu

Doctoral Dissertation Advisor (AC)

Seth Cordts, Myra Kurosu Jalil, Jun Lee, Rajorshi Paul, Rosa Son, Kevin Zhang

Master's Program Advisor

Elle McCue, Daniel Pack, Shrey Verma

Doctoral Dissertation Co-Advisor (AC)

Ramon Rodriguez

Postdoctoral Research Mentor

Sungu Kim

Doctoral (Program)

Feven Naba, Ashka Patel

Publications

PUBLICATIONS

- **Microdissection tools to generate organoids for modeling the tumor immune microenvironment.** *Microsystems & nanoengineering*
Cordts, S. C., Yuki, K., Henao Echeverri, M. F., Narasimhan, B., Kuo, C. J., Tang, S. K.
2024; 10 (1): 126
- **Can artificial intelligence (AI) replace oral food challenge?** *The Journal of allergy and clinical immunology*
Tang, S. K., Castaño, N., Nadeau, K. C., Galli, S. J.
2024
- **Exponential magnetophoretic gradient for the direct isolation of basophils from whole blood in a microfluidic system.** *Lab on a chip*
Castano, N., Kim, S., Martin, A. M., Galli, S. J., Nadeau, K. C., Tang, S. K.
2022

- **Microfluidic guillotine reveals multiple timescales and mechanical modes of wound response in *Stentor coeruleus*.** *BMC biology*
Zhang, K. S., Blauch, L. R., Huang, W., Marshall, W. F., Tang, S. K.
2021; 19 (1): 63
- **Self-repairing cells: How single cells heal membrane ruptures and restore lost structures.** *Science (New York, N.Y.)*
Tang, S. K., Marshall, W. F.
2017; 356 (6342): 1022-1025
- **Microfluidic guillotine for single-cell wound repair studies.** *Proceedings of the National Academy of Sciences of the United States of America*
Blauch, L. R., Gai, Y. n., Khor, J. W., Sood, P. n., Marshall, W. F., Tang, S. K.
2017; 114 (28): 7283-88
- **Physical Forces in Regeneration of Cells and Tissues.** *Cold Spring Harbor perspectives in biology*
Tang, S. K., Marshall, W. F.
2024
- **SMORES: a simple microfluidic operating room for the examination and surgery of *Stentor coeruleus*.** *Scientific reports*
Zhang, K. S., Rodriguez, R., Tang, S. K.
2024; 14 (1): 8684
- **SMORES: A Simple Microfluidic Operating Room for the Examination and Surgery of *Stentor coeruleus*.** *bioRxiv : the preprint server for biology*
Zhang, K. S., Rodriguez, R., Tang, S. K.
2024
- **Parallelized Immunomagnetic Isolation of Basophils Directly from Whole Blood.** *Advanced nanobiomed research*
Myles, J., Castaño, N., Kim, S., Zhu, Z., Tang, S. K.
2024; 4 (2)
- **Parallelized Immunomagnetic Isolation of Basophils Directly from Whole Blood** *ADVANCED NANOBIOMED RESEARCH*
Myles, J., Castano, N., Kim, S., Zhu, Z., Tang, S. Y.
2023
- **Combining avidin with CD63 improves basophil activation test accuracy in classifying peanut allergy.** *Allergy*
Castaño, N., Chua, K., Kaushik, A., Kim, S., Cordts, S. C., Nafarzadegan, C. D., Hofmann, G. H., Seastedt, H., Schuetz, J. P., Dunham, D., Parsons, E. S., Tsai, M., Cao, et al
2023
- **The role of a robust cytoskeleton in wound resistance and healing in the ciliate *Stentor coeruleus***
Nadkarni, A. V., Zhang, K. S., Marshall, W. F., Tang, S. Y.
AMER SOC CELL BIOLOGY.2023: 268-269
- **The role of a robust cytoskeleton in wound resistance and healing in the ciliate *Stentor coeruleus***
Nadkarni, A. V., Zhang, K. S., Marshall, W. F., Tang, S. Y.
AMER SOC CELL BIOLOGY.2023: 403
- **Collective behavior of crowded drops in microfluidic systems** *PHYSICAL REVIEW FLUIDS*
Gai, Y., Montessori, A., Succi, S., Tang, S. Y.
2022; 7 (8)
- **Hydrodynamic dissection of *Stentor coeruleus* in a microfluidic cross junction.** *Lab on a chip*
Paul, R., Zhang, K. S., Kurosu Jalil, M., Castano, N., Kim, S., Tang, S. K.
2022
- **Modular, cascade-like transcriptional program of regeneration in *Stentor*.** *eLife*
Sood, P., Lin, A., Yan, C., McGillivray, R., Diaz, U., Makushok, T., Nadkarni, A., Tang, S. K., Marshall, W. F.
2022; 11
- **The living interface between synthetic biology and biomaterial design.** *Nature materials*
Liu, A. P., Appel, E. A., Ashby, P. D., Baker, B. M., Franco, E., Gu, L., Haynes, K., Joshi, N. S., Kloxin, A. M., Kouwer, P. H., Mittal, J., Morsut, L., Noireaux, et al

2022; 21 (4): 390-397

- **Development of Basophil Activation Test (BAT)-based point-of-care diagnostic tool for allergies**
Ha, J., Castano, N., Cansdale, S., Vel, M., Tang, S., Tsai, M., Nadeau, K., Galli, S.
MOSBY-ELSEVIER.2022: AB48
- **Microfluidic Surgery in Single Cells and Multicellular Systems.** *Chemical reviews*
Zhang, K. S., Nadkarni, A. V., Paul, R., Martin, A. M., Tang, S. K.
1800
- **Fabrication of a silicon mu Dicer for uniform microdissection of tissue samples** *APPLIED PHYSICS LETTERS*
Cordts, S. C., Castano, N., Koppaka, S., Tang, S. Y.
2021; 119 (1)
- **Strategic placement of an obstacle suppresses droplet break up in the hopper flow of a microfluidic soft crystal.** *Proceedings of the National Academy of Sciences of the United States of America*
Bick, A. D., Khor, J. W., Gai, Y., Tang, S. K.
2021; 118 (19)
- **Fomite Transmission, Physicochemical Origin of Virus-Surface Interactions, and Disinfection Strategies for Enveloped Viruses with Applications to SARS-CoV-2.** *ACS omega*
Castano, N., Cordts, S. C., Kurosu Jalil, M., Zhang, K. S., Koppaka, S., Bick, A. D., Paul, R., Tang, S. K.
2021; 6 (10): 6509–27
- **Microfluidics-Coupled Radioluminescence Microscopy for In Vitro Radiotracer Kinetic Studies.** *Analytical chemistry*
Kim, T. J., Ha, B., Bick, A. D., Kim, M., Tang, S. K., Pratz, G.
2021
- **Vision-based Autonomous Disinfection of High-touch Surfaces in Indoor Environments**
Roelofs, S., Landry, B., Jalil, M., Martin, A., Koppaka, S., Tang, S. Y., Pavone, M., IEEE
IEEE.2021: 263-270
- **Fabrication of 3D Micro-Blades for the Cutting of Biological Structures in a Microfluidic Guillotine.** *Micromachines*
Koppaka, S., Zhang, K. S., Kurosu Jalil, M., Blauch, L. R., Tang, S. K.
2021; 12 (9)
- **Interaction and breakup of droplet pairs in a microchannel Y-junction** *PHYSICAL REVIEW FLUIDS*
Schuetz, S. S., Khor, J., Tang, S. Y., Schneider, T. M.
2020; 5 (8)
- **Aurora kinase inhibitors delay regeneration in Stentor coeruleus at an intermediate step.** *Matters select*
Lin, A., Summers, D., Reiff, S. B., Tipton, A. R., Tang, S. K., Marshall, W. F.
2020; 6 (4)
- **Aurora kinase inhibitors delay regeneration in Stentor coeruleus at an intermediate step** *ScienceMatters*
Lin, A., Summers, D., Reiff, S. B., Tipton, A. R., Tang, S. K., Marshall, W. F.
2020
- **Microfluidic methods for precision diagnostics in food allergy.** *Biomicrofluidics*
Castaño, N. n., Cordts, S. C., Nadeau, K. C., Tsai, M. n., Galli, S. J., Tang, S. K.
2020; 14 (2): 021503
- **Transcription polymerase-catalyzed emergence of novel RNA replicons.** *Science (New York, N.Y.)*
Jain, N. n., Blauch, L. R., Szymanski, M. R., Das, R. n., Tang, S. K., Yin, Y. W., Fire, A. Z.
2020
- **MICROFLUIDIC TOOLS FOR SINGLE-CELL WOUND REPAIR STUDIES**
Blauch, L. R., Zhang, K., Tang, S. Y., IEEE
IEEE.2020: 140–41
- **Effect of volume fraction on droplet break-up in an emulsion flowing through a microfluidic constriction** *APPLIED PHYSICS LETTERS*

- Bick, A. D., Tang, S. Y.
2019; 115 (9)
- **Modified Micro-Emulsion Synthesis of Highly Dispersed Al/PVDF Composites with Enhanced Combustion Properties** *ADVANCED ENGINEERING MATERIALS*
Huang, S., Pan, M., Deng, S., Jiang, Y., Zhao, J., Levy-Wendt, B., Tang, S. Y., Zheng, X.
2019; 21 (5)
 - **Using machine learning to discover shape descriptors for predicting emulsion stability in a microfluidic channel** *SOFT MATTER*
Khor, J., Jean, N., Luxenberg, E. S., Ermon, S., Tang, S. Y.
2019; 15 (6): 1361–72
 - **Timescale and spatial distribution of local plastic events in a two-dimensional microfluidic crystal** *PHYSICAL REVIEW FLUIDS*
Gai, Y., Bick, A., Tang, S. Y.
2019; 4 (1)
 - **Cell-based biosynthesis of linear protein nanoarrays**
Ishikawa, H., Yu, J. E., Tian, J., Tang, S. Y., Qin, H., Marshall, W. F., Achilefu, S., Raghavachari, R.
SPIE-INT SOC OPTICAL ENGINEERING.2019
 - **Cell learning.** *Current biology : CB*
Tang, S. K., Marshall, W. F.
2018; 28 (20): R1180–R1184
 - **Primer Cell learning** *CURRENT BIOLOGY*
Tang, S. Y., Marshall, W. F.
2018; 28 (20): R1180–R1184
 - **Phenotyping antibiotic resistance with single-cell resolution for the detection of heteroresistance** *SENSORS AND ACTUATORS B-CHEMICAL*
Lyu, F., Pan, M., Patil, S., Wang, J., Matin, A. C., Andrews, J. R., Tang, S. Y.
2018; 270: 396–404
 - **Programming self-organizing multicellular structures with synthetic cell-cell signaling** *SCIENCE*
Toda, S., Blauch, L. R., Tang, S. Y., Morsut, L., Lim, W. A.
2018; 361 (6398): 156+
 - **Internal flow inside droplets within a concentrated emulsion during droplet rearrangement** *Physics of Fluids*
Leong, C. M., Gai, Y., Tang, S. K.
2018
 - **Quantifying phenotypes in single cells using droplet microfluidics** *MICROFLUIDICS IN CELL BIOLOGY, PT C: MICROFLUIDICS FOR CELLULAR AND SUBCELLULAR ANALYSIS*
Lyu, F., Blauch, L. R., Tang, S. Y., Fletcher, D. A., Doh, J., Piel, M.
2018; 148: 133-159
 - **Quantifying phenotypes in single cells using droplet microfluidics.** *Methods in cell biology*
Lyu, F., Blauch, L. R., Tang, S. K.
2018; 148: 133–59
 - **Time-varying droplet configuration determines break-up probability of drops within a concentrated emulsion** *APPLIED PHYSICS LETTERS*
Khor, J., Kim, M., Schutz, S. S., Schneider, T. M., Tang, S. Y.
2017; 111 (12)
 - **Methods to coalesce fluorinated Pickering emulsions** *ANALYTICAL METHODS*
Pan, M., Lyu, F., Tang, S. Y.
2017; 9 (31): 4622-4629
 - **Encapsulation of Single Nanoparticle in Fast-Evaporating Micro-droplets Prevents Particle Agglomeration in Nanocomposites** *ACS APPLIED MATERIALS & INTERFACES*
Pan, M., Shi, X., Lyu, F., Levy-Wendt, B., Zheng, X., Tang, S. Y.
2017; 9 (31): 26602–9

- **Towards a droplet radiometric assay for single-cell analysis.** *Analytical chemistry*
Gallina, M. E., Kim, T. J., Shelor, M., Vasquez, J., Mongersun, A., Kim, M., Tang, S. K., Abbyad, P., Pratz, G.
2017
- **Amphiphilic nanoparticles as droplet stabilizers for high-fidelity droplet-based biochemical assays**
Pan, M., Tang, S.
AMER CHEMICAL SOC.2017
- **High-Efficiency and High-Throughput On-Chip Exchange of the Continuous Phase in Droplet Microfluidic Systems.** *SLAS technology*
Kim, M., Leong, C. M., Pan, M., Blauch, L. R., Tang, S. K.
2017: 2472630317692558-?
- **Amphiphilic nanoparticles suppress droplet break-up in a concentrated emulsion flowing through a narrow constriction.** *Biomicrofluidics*
Gai, Y. n., Kim, M. n., Pan, M. n., Tang, S. K.
2017; 11 (3): 034117
- **Toward a Droplet-Based Single-Cell Radiometric Assay** *Analytical Chemistry*
Gallina, M. G., Kim, T., et al
2017: 6472-6481
- **Methods to coalesce fluorinated Pickering emulsions** *Analytical Methods*
Pan, M., Lyu, F., Tang, S. K.
2017; 9: 4622-4629
- **Encapsulation of Single Nanoparticle in Fast-Evaporating Micro-droplets Prevents Particle Agglomeration in Nanocomposites** *ACS Applied Materials & Interfaces*
Pan, M., Shi, X., Lyu, F., Levy-Wendt, B. L., Zheng, X., Tang, S. K.
2017; 9 (31): 26602–26609
- **Time-varying droplet configuration determines break-up probability of drops within a concentrated emulsion** *Applied Physics Letters*
Khor, J., Kim, M., Schütz, S. S., Schneider, T. M., Tang, S. K.
2017; 111: 124102
- **Internal flow in droplets within a concentrated emulsion flowing in a microchannel** *PHYSICS OF FLUIDS*
Leong, C. M., Gai, Y., Tang, S. K.
2016; 28 (11)
- **Spatiotemporal periodicity of dislocation dynamics in a two-dimensional microfluidic crystal flowing in a tapered channel.** *Proceedings of the National Academy of Sciences of the United States of America*
Gai, Y., Leong, C. M., Cai, W., Tang, S. K.
2016; 113 (43): 12082-12087
- **Confinement and viscosity ratio effect on droplet break-up in a concentrated emulsion flowing through a narrow constriction.** *Lab on a chip*
Gai, Y., Khor, J. W., Tang, S. K.
2016; 16 (16): 3058-3064
- **Low energy emulsion-based fermentation enabling accelerated methane mass transfer and growth of poly(3-hydroxybutyrate)-accumulating methanotrophs.** *Bioresource technology*
Myung, J., Kim, M., Pan, M., Criddle, C. S., Tang, S. K.
2016; 207: 302-307
- **Surface-functionalizable amphiphilic nanoparticles for pickering emulsions with designer fluid-fluid interfaces** *RSC ADVANCES*
Pan, M., Kim, M., Blauch, L., Tang, S. K.
2016; 6 (46): 39926-39932
- **Fluorinated Pickering Emulsions with Nonadsorbing Interfaces for Droplet-based Enzymatic Assays** *ANALYTICAL CHEMISTRY*
Pan, M., Lyu, F., Tang, S. K.
2015; 87 (15): 7938-7943
- **Actuating Fluid-Fluid Interfaces for the Reconfiguration of Light** *IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS*

-
- Pan, M., Kim, M., Kuiper, S., Tang, S. K.
2015; 21 (4)
- **Quantitative detection of cells expressing BlaC using droplet-based microfluidics for use in the diagnosis of tuberculosis.** *Biomicrofluidics*
Lyu, F., Xu, M., Cheng, Y., Xie, J., Rao, J., Tang, S. K.
2015; 9 (4): 044120-?
 - **Quantitative detection of cells expressing BlaC using droplet-based microfluidics for use in the diagnosis of tuberculosis** *BIOMICROFLUIDICS*
Lyu, F., Xu, M., Cheng, Y., Xie, J., Rao, J., Tang, S. K.
2015; 9 (4)
 - **Optofluidic ultrahigh-throughput detection of fluorescent drops.** *Lab on a chip*
Kim, M., Pan, M., Gai, Y., Pang, S., Han, C., Yang, C., Tang, S. K.
2015; 15 (6): 1417-1423
 - **Fluorinated Pickering Emulsions Impede Interfacial Transport and Form Rigid Interface for the Growth of Anchorage-Dependent Cells** *ACS APPLIED MATERIALS & INTERFACES*
Pan, M., Rosenfeld, L., Kim, M., Xu, M., Lin, E., Derda, R., Tang, S. K.
2014; 6 (23): 21446-21453
 - **Time capsule: an autonomous sensor and recorder based on diffusion-reaction.** *Lab on a chip*
Gerber, L. C., Rosenfeld, L., Chen, Y., Tang, S. K.
2014; 14 (22): 4324-4328
 - **Droplet microfluidics for diagnostics applications**
Pan, M., Kim, M., Rosenfeld, L., Gerber, L., Tang, S. Y.
AMER CHEMICAL SOC.2014
 - **Review and analysis of performance metrics of droplet microfluidics systems** *MICROFLUIDICS AND NANOFUIDICS*
Rosenfeld, L., Lin, T., Derda, R., Tang, S. K.
2014; 16 (5): 921-939
 - **Prospective identification of parasitic sequences in phage display screens.** *Nucleic acids research*
Matochko, W. L., Cory Li, S., Tang, S. K., Derda, R.
2014; 42 (3): 1784-1798
 - **Break-up of droplets in a concentrated emulsion flowing through a narrow constriction** *SOFT MATTER*
Rosenfeld, L., Fan, L., Chen, Y., Swoboda, R., Tang, S. K.
2014; 10 (3): 421-430
 - **Discovery of cell-binding peptides using Ph.D.-7, deep-sequencing and emulsion amplification**
Matochko, W. L., Ng, S., Jafari, M. R., Tang, S. Y., Derda, R. L.
AMER CHEMICAL SOC.2013
 - **Filter-based assay for Escherichia coli in aqueous samples using bacteriophage-based amplification.** *Analytical chemistry*
Derda, R., Lockett, M. R., Tang, S. K., Fuller, R. C., Maxwell, E. J., Breiten, B., Cuddemi, C. A., Ozdogan, A., Whitesides, G. M.
2013; 85 (15): 7213-7220
 - **Prospective identification of parasitic sequences in phage-display screens** *Nucleic Acids Research*
Matochko, W., Li, C., Tang, Sindy, K.Y., Derda, R.
2013
 - **Single particle detection in CMOS compatible photonic crystal nanobeam cavities** *Optics Express*
Quan, Q., Floyd, Daniel, L., Burgess, Ian, B., Deotare, Parag, B., Frank, Ian, W., Tang, Sindy, K.Y.
2013; 21: 32225-32233
 - **Characterization of sensitivity and specificity in leaky droplet-based assays.** *Lab on a chip*
Chen, Y., Wijaya Gani, A., Tang, S. K.
2012; 12 (23): 5093-5103

- **Uniform amplification of phage display libraries in monodisperse emulsions** *METHODS*
Matochko, W. L., Ng, S., Jafari, M. R., Romaniuk, J., Tang, S. K., Derda, R.
2012; 58 (1): 18-27
- **Characterization of sensitivity and specificity in leaky droplet-based assays** *LAB ON A CHIP*
Chen, Y., Gani, A. W., Tang, S. K.
2012; 12 (23): 5093-5103
- **High-Q, Low Index-Contrast Polymeric Photonic Crystal Nanobeam Cavities** *Conference on Lasers and Electro-Optics (CLEO)*
Quan, Q., Burgess, I. B., Tang, S. K., Floyd, D. L., Loncar, M.
IEEE.2012
- **High-Q, low index-contrast polymeric photonic crystal nanobeam cavities** *OPTICS EXPRESS*
Quan, Q., Burgess, I. B., Tang, S. K., Floyd, D. L., Loncar, M.
2011; 19 (22): 22191-22197
- **Bioinspired self-repairing slippery surfaces with pressure-stable omniphobicity** *NATURE*
Wong, T., Kang, S. H., Tang, S. K., Smythe, E. J., Hatton, B. D., Grinthal, A., Aizenberg, J.
2011; 477 (7365): 443-447
- **Denaturation of Proteins by SDS and Tetraalkylammonium Dodecyl Sulfates** *LANGMUIR*
Lee, A., Tang, S. K., Mace, C. R., Whitesides, G. M.
2011; 27 (18): 11560-11574
- **Reconfigurable Self-Assembly of Mesoscale Optical Components at a Liquid-Liquid Interface** *ADVANCED MATERIALS*
Tang, S. K., Derda, R., Mazzeo, A. D., Whitesides, G. M.
2011; 23 (21): 2413-?
- **Multizone Paper Platform for 3D Cell Cultures** *PLOS ONE*
Derda, R., Tang, S. K., Laromaine, A., Mosadegh, B., Hong, E., Mwangi, M., Mammoto, A., Ingber, D. E., Whitesides, G. M.
2011; 6 (5)
- **Externally Applied Electric Fields up to 1.6×10^5 V/m Do Not Affect the Homogeneous Nucleation of Ice in Supercooled Water** *JOURNAL OF PHYSICAL CHEMISTRY B*
Stan, C. A., Tang, S. K., Bishop, K. J., Whitesides, G. M.
2011; 115 (5): 1089-1097
- **Diversity of Phage-Displayed Libraries of Peptides during Panning and Amplification** *MOLECULES*
Derda, R., Tang, S. K., Li, S. C., Ng, S., Matochko, W., Jafari, M. R.
2011; 16 (2): 1776-1803
- **Continuously tunable microdroplet-laser in a microfluidic channel** *OPTICS EXPRESS*
Tang, S. K., Derda, R., Quan, Q., Loncar, M., Whitesides, G. M.
2011; 19 (3): 2204-2215
- **Cytoplasmic self-organization of internal membranes, microtubule- and actin-cytoskeleton inside microfluidics generated droplets** *Annual Meeting of the American-Society-for-Cell-Biology (ASCB)*
Tang, S., Renz, M., Driscoll, M., REBER, S., Nguyen, A., Daniels, B., Field, C., Lippincott-Schwartz, J.
AMER SOC CELL BIOLOGY.2011
- **Slippery surfaces with omniphobicity, self-repair, high-pressure stability and optical transparency** *Nature*
Wong, T., Kang, S. H., Tang, Sindy, K.Y., Smythe, E., Hatton, B., Grinthal, A.
2011; 447: 443
- **Monte Carlo simulation of centrosomal self-centering due to pushing by microtubules in large cells.** *Annual Meeting of the American-Society-for-Cell-Biology (ASCB)*
Tang, S. K., Castle, B. T., Odde, D. J.
AMER SOC CELL BIOLOGY.2011
- **Cofabrication: A Strategy for Building Multicomponent Microsystems** *ACCOUNTS OF CHEMICAL RESEARCH*

Siegel, A. C., Tang, S. K., Nijhuis, C. A., Hashimoto, M., Phillips, S. T., Dickey, M. D., Whitesides, G. M.
2010; 43 (4): 518-528

- **Uniform Amplification of Phage with Different Growth Characteristics in Individual Compartments Consisting of Monodisperse Droplets** *ANGEWANDTE CHEMIE-INTERNATIONAL EDITION*
Derda, R., Tang, S. K., Whitesides, G. M.
2010; 49 (31): 5301-5304
- **Paper-supported 3D cell culture for tissue-based bioassays** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Derda, R., Laromaine, A., Mammoto, A., Tang, S. K., Mammoto, T., Ingber, D. E., Whitesides, G. M.
2009; 106 (44): 18457-18462
- **Independent Control of Drop Size and Velocity in Microfluidic Flow-Focusing Generators Using Variable Temperature and Flow Rate** *ANALYTICAL CHEMISTRY*
Stan, C. A., Tang, S. K., Whitesides, G. M.
2009; 81 (6): 2399-2402
- **A multi-color fast-switching microfluidic droplet dye laser** *LAB ON A CHIP*
Tang, S. K., Li, Z., Abate, A. R., Agresti, J. J., Weitz, D. A., Psaltis, D., Whitesides, G. M.
2009; 9 (19): 2767-2771
- **Basic Microfluidic and Soft Lithographic Techniques** *Optofluidics: Fundamentals, Devices, and Applications*
Tang, Sindy, K.Y., Whitesides, George, M.
McGraw-Hill.2009
- **Optical Components Based on Dynamic Liquid-liquid Interfaces** *Optofluidics: Fundamentals, Devices, and Applications*
Tang, Sindy, K.Y., Whitesides, George, M.
McGraw-Hill.2009
- **Dynamically reconfigurable liquid-core liquid-cladding lens in a microfluidic channel** *LAB ON A CHIP*
Tang, S. K., Stan, C. A., Whitesides, G. M.
2008; 8 (3): 395-401
- **Optical waveguiding using thermal gradients across homogeneous liquids in microfluidic channels** *APPLIED PHYSICS LETTERS*
Tang, S. K., Mayers, B. T., Vezenov, D. V., Whitesides, G. M.
2006; 88 (6)